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## ORIGINAL ARTICLES.

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### THE HORSE'S FOOT.

By A. ZUNDEL.

(Continued from page 102.)

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#### CARTILAGINOUS QUITTOR.

I.—*Symptoms.*—A division has been made of an *acute* and a *chronic* form of this disease. Under the first name, is considered the earlier period of the affection, that in which there is inflammation of the cartilage and painful swelling of the part, and when the caries or necrosis of the fibro-cartilage is not yet established; or if there is a wound, when it does not yet granulate, and the suppuration, if it exists, is very slight. Chronic javart would be that in which the partial and progressive mortification of the fibro-cartilage exists; for, as Renault has said, it is the ordinary termination of fibro-chondritis.

When free from serious complication, the disease is generally accompanied with but little lameness; sometimes there is almost none, and animals can be kept at work, especially at a slow gait; but if made to trot, the horse will show lameness. It is especially when the quittor exists in the posterior parts, that the inflamma-

tion and the pain are not excessive, because there is there an abundance of soft, fatty tissue. But when the caries is more forward, and is situated more deeply, in a point nearer the articular surfaces, the lesion then affects the fibrous tissues, and the pain is greater. It is sometimes excessively acute.

Upon the lateral part of the coronet, towards the heels or the quarters, a more or less developed tumefaction appears, more or less painful, according to the duration of the disease, and in this case more or less indurated. In the centre there exists a granulating fistulous wound. There are one or several fistulæ, whose openings shows granulations, bleeding easily, their course always forward, running at times in straight lines, at others irregularly. The tracts frequently communicate, and discharge a granular, serous and thin pus, of pale greyish color, generally odorless, or slightly sanious, containing greenish particles, which are but pieces of diseased fibro-cartilage. This pus dries up on the surface and adheres to the hoof and to the hairs, and some times irritates the surface of the skin. If one of these fistula become cicatrized, a fluctuating tumor soon appears, close to it, which rapidly ulcerates, and then gives rise to another fistula. If the disease is quite old, the hoof of the quarter corresponding to the necrosed cartilage, loses its perioplic band, becoming rough, ramy and cracked, and the wall is thickened, because the irritation of the coronary band has stimulated its growth. This change in the condition of the wall varies with the length of time the disease has existed, and consequently, it indicates its duration quite accurately, when one remembers that the hoof grows downwards about one centimeter in each month.

When cartilaginous quittor is the sequelæ or complication of suppurative corn; of a punctured wound by a nail of the shoe; or any other affection of the foot, the symptoms proper to these diseases are first observed, though the lameness is greater, and the fistulæ of the quittor is evident. Often, however, this, instead of being external and on the coronet, is situated at the inferior part of the foot, at the internal face of the inferior border of the wall, upon the sole, and sometimes connected with the wound of some of those affections of the foot.

II.—*Pathological Anatomy.*—When one examines the cartilage affected with the necrosis proper of quittor, he always finds lesions in proportion to the intensity and the age of the disease. It is seldom, however, that the portions of the cartilage which have undergone the green degeneration, constituting the caries, reaches more than one centimeter in extent; they have the form of a small plate, of a green color, ordinarily elongated, and adherent to the healthy parts of the cartilage by one of its extremities, that which is more forward and the deepest. Others have compared it to the green growth of a seed in germination. The points of the fibro-cartilage which are in immediate contact with the carious portion, have also a slight, pale greenish hue. These are already diseased; there is already a beginning of necrosis; in the remainder of its extent this exfoliation is separated from the cartilage by a reddish, soft tissue, which also lines the inside of the fistulous tract. This fistula, which extends from the necrosed spot to the skin, is but the hollow tract left by the diseased process upon the cartilage, while gradually destroying its substance. Always lined with a pseudo-mucous membrane, by a true pyogenic apparatus, the fistula is often narrow, sinuous, irregular in its course and in its extent, especially if the disease is of some standing.

Renault, and after him Lafosse, have mentioned a special alteration of the fibro-cartilage which is sometimes met, and which Lafosse looks upon as a step towards recovery. It is a softening of the tissue, anatomically characterized by a loss of the consistency of the cartilage, resembling the case of the cellular tissue becoming indurated, or that of bones deprived of their earthy salts after soaking in weak acids; its yellowish color is then characteristic. It may be noticed during life, and is recognized by a softening in the region of the cartilage, which then yields, giving easily to the pressure of the finger. Besides this, a probe introduced into the fistulous tract readily penetrates into the softened substance. But the true way to diagnosticate this change consists in raising the coronary band or after thinning the wall; then one will see and may feel the true nature of the transformation. Lafosse adds that, in presence of this altera-

tion, the removal of the cartilage is no more necessary, for then the cicatrization is readily obtained by stimulating the sloughing of the necrosed tissue or by removing it.

With cartilaginous quittor there is always plastic infiltration of the cellular tissue surrounding the cartilage. Very often the wall of the synovial capsula of the articulation of the foot is somewhat thickened, and in that case there is less risk of injuring it during the operation.—(Rey.)

III.—*Progress, Duration and Termination.*—Left to itself, the caries of the fibro-cartilage may last for a long time, through difficulty in determining its true nature. Spontaneous cure, however, is not impossible, as Renault proved it, and as many practitioners have seen it, especially in young and healthy subjects, when the disease is mild at its onset and affects parts of the organs where the fibrous element predominates, as in the posterior portion of the cartilage. This fortunate result follows the sloughing of the "bourbillon" which makes its appearance under the shape of a greenish particle.

But, ordinarily, the disease progresses slowly, destroying the cartilage by degrees, and the diseased process ceases only when the caries has reached the ligament of the joint, which it sometimes also attacks. The tissue of the fibro-cartilages has not the force of reaction possessed by other inflamed structures, and which is so well marked in cellular tissue. A process of suppuration, such as rapidly eliminates the mortified structure, cannot very readily take place in it, and when by natural forces the carious spot is eliminated, and pushed outwards, the surrounding tissues are most commonly already affected. These undergo the same alterations, are eliminated in the same manner, and so until the entire cartilage is destroyed. This process of caries by repitation may last a year.

In its progressive stage, the disease may spread to surrounding parts, such as the os pedis, the plantar aponeurosis, the ligament of the joint, or the sesamoid sheath, all of which may become the seat of inflammation. They are diagnosticated by the greater pain and more marked lameness, symptoms which are comparatively light in the simple necrosis of the cartilage.

Finally, as a possible complication of cartilaginous quittor, one may observe an entire emaciation of the animal, an alteration of the fluids due to a putrid or purulent infection; some authors claim to have even seen glanders and farcy follow it; this is inadmissible.

IV.—*Diagnosis*.—Cartilaginous quittor is recognized only when there is a wound from which escapes the product of the suppuration and of the necrosis. This pus has nothing characteristic, notwithstanding what has been said. If it is thinner than that of a simple solution of continuity of the region, or that of simple quittor; if it is less foetid than that of bony caries; it has, however, of itself some special characters, varying according to the subject and the degree of the disease, and especially resembling much that of sub-horny quittor. If the escape of the pus is slow, and it is desired to carefully examine it, a simple pad of oakum, kept by a few turns of bandages on the fistulous opening, will, when removed, give a sufficient opportunity to recognize its nature.

The probing will often assist in distinguishing the cartilaginous from the simple or sub-horny quittors. In these last, the fistula is less profound, and does not reach the thickness of the cartilage; but, as in cartilaginous disease, the fistula is often sinuous, it is better to use a soft, flexible instrument, such as a fine probe made of lead. The injection of liquid may take the place of the probing; injected in a superficial tract, it returns outwards directly, while in deeper and irregular fistulæ, it will penetrate more readily. The induration of the coronet, the rough and ramy appearance of the hoof of the quarter corresponding to the fistula, indicate generally a necrosis of the fibro-cartilage; these characters are missing in the furuncle.

V.—*Prognosis*.—In consequence of the tenacity of the disease, this form of quittor is always serious; though this gravity has, in our days, greatly diminished, on account of the means of treatment now in use, which were unknown some thirty years ago. Now, this affection, which was considered by all hippiatres as almost incurable, and which more recently was treated by an operation which rendered the animal unfit for work for several

months, can in the majority of cases be cured in about fifteen days.

The prognosis, however, varies and depends on the complication. When there is caries of the ligaments, inflammation of the articulation of the foot, or of the sesamoid sheath, the extirpation of the cartilage itself, done with the greatest dexterity, is not even a warranty of recovery. It remedies only the necrosis of the cartilage, but leaves the other diseased processes to progress in such a manner that the animal remains worthless if he has not to succumb to them. The pain is, besides the other signs, one of the most important points to consider: very acute, it is generally a discouraging omen, and points to the existence of serious complications.

VI.—*Etiology*.—Heavy draught horses are more frequently affected, on account of their peculiar work. The most common cause is a bruise, a blow, a burn, a prick, any wound exposing the cartilage; it is most common on horses drawing trucks loaded with stones, which may drop on their feet and crush the fibro-cartilage. The same cause exists for horses working in extensive works of buildings; in the construction of railroads; and in the shops of mechanic construction.

Owing to these conditions it is also more common in large cities than in the country, and more frequent in stony and temporary roads than in those which are smooth and flat. Flat feet, with low heels, are more exposed than others, as well as those whose hoofs are soft. Quittor is more frequent in the fore than the hind feet, the fibro-cartilages of the fore feet being more developed and more flexible, and because their heels are generally lower than in the hind legs. In some, it is more common on the internal than the external quarters, while with us, it has been the contrary.

It is often a complication of suppurative corn; of punctured wound of the foot, of canker, of simple and sub-horny quittor, of grease, etc., which are then the determining causes of the disease.

*(To be continued.)*

## ACTINOMYKOSIS: A NEW INFECTIOUS DISEASE OF ANIMALS AND MANKIND.\*

BY GEORGE FLEMING, F.R.C.V.S., ARMY VETERINARY INSPECTOR.

(Continued from p. 124.)

Johne and Vachetta point out that the periphery of the *actinomyces* tuft is not always so symmetrical as Harz has represented, and my own observations confirm this remark. When closely examined, many of the club-shaped cells towards the periphery will be found standing out prominently from the others, and measuring about 0.0019 mm. broad to 0.0740 mm. long.

Here and there are some fine, pale, faintly shining, single mycelium threads springing from the depths of the tuft, and appearing beyond its margin. Another tuft, or portion of one, mainly consists of such mycelium or hyphen-threads. Very exceptionally, there are seen at the peripheral end of these fine threads, a delicate pear-shaped expansion; and among them are larger pear or club-shaped cells, often crowded together; while not unfrequently are noticed isolated, and generally small tufts, which appear to be composed only of the very finest mycelia, and which Harz looked upon as aborted forms, but which Johne considers young growths. Within the zone of the tuft, and especially towards the centre, are not only the upper surfaces or ends of the larger club-shaped cells visible, but also small shining corpuscles, which resemble micrococci. In the centre of the tuft, in addition, are extremely fine, but not very numerous mycelia; and beyond these, passing direct towards the periphery, are many mycelia with their extremity expanding into a long pear-shaped body, which has received the name of conidium, and of which there is generally only one for each thread. In breaking up or pressing the tuft, the conidia are very easily detached in the shape of conical or pyriform bodies, with in many instances the narrow end much elongated. The mycelium is irregularly branched, two

\*From the *Veterinary Journal*.

or more conidia growing from each by means of their narrow extremity, something like a bunch of grapes.

The various forms the conidia may assume are shown by Johnne, Pontick, Harz and Israel; but the most diverse opinions are entertained as to the development and growth of the fungus itself.

It is probable that when the fungus-tufts become calcified, as they are often found to be, their growth has ceased, and they can no longer fructify.

Culture experiments have hitherto not been very successful, so that we are still in the dark as to the process of, or length of time necessary for, development. Clinical observation and experimental inoculation, however, would go to prove that spontaneous or accidental actinomykotic tumors take longer to grow than those which are experimentally produced.

Israel was of opinion that the mycelium of the fungus obtaining access to the tonsils of mankind and there producing germs or spores, gave rise to actinomykosis; and Johnne believes he found corroborative evidence of this in making a careful examination of the tonsils in the section of a pig's head. Externally, these appeared quite healthy, and on pressing some of the glandulæ only the ordinary turbid mucus fluid they usually contain was expelled; but from others there was expressed a yellow, thick, grumous matter, something like pus, and which on examination by means of the microscope was found to have a very great number of *actinomyces* tufts of various sizes and in different stages of development, some of them even calcareous. A section of the amygdaloid cavity showed that it was much dilated, and its lymphoid tissue normal, as a rule; only in some preparations of the part did this tissue appear infiltrated with small cells. In some of the glandulæ were small, delicate, but rigid vegetable particles, which were for the most part fragments of corn or barley husk; and on close inspection there were perceived, either on the surface of these particles or clustered on the beard of the barley, with few exceptions, crowds of pear-shaped hyphenless conidia, which in form, size, etc., differed in no respect from those found in the actinomykosis nodules.

Johns subsequently examined the tonsils of twenty-four pigs which were apparently quite healthy, and with only two exceptions found them free from these fungi. He could never discover them in the tonsils of cattle.

### *Pathology.*

There can scarcely be any doubt as to the etiology of actinomykosis. The *actinomyces* is constantly found in new formations of a special kind, and through its irritating and disintegrating influence it not only produces these formations, but sets up destructive processes in the tissues in which it may locate itself; and sooner or later, unless it loses its power or is removed from them, it causes their death. An *actinomyces* tumor must, therefore, be looked upon as what German pathologist designate an "infection tumor," and actinomykosis as an infectious disease.

As has been said, the tumors offer certain distinctive characters, and all tumors possessing these characters contain the fungus. Externally these growths, be they large or small, present various appearances; but they are generally round, lobular, or fungiform in shape, smooth on the surface, and soft in consistency, like the polypi-sarcomata, or somewhat hard, like the fibro-sarcomata or fibromata. In color they also vary—the latter being of a greyish-white, or light-yellow tint; the former are darker, less vascular, and often stained by blood extravasations. Studding the surface, and particularly in the softer variety, are generally seen a multitude of small, very yellow nodules, whose presence is really a diagnostic feature. On section, the typical character of the actinomykoma is best displayed. Imbedded in the fibrous stroma of the growth are noticed the various sized nodules, more or less numerous, small and isolated, or in confluent rounded masses the size of a hazel or walnut, grey or yellow in color, of a cheesy softness, and in the very smallest of them are a number of minute particles or centre, sulphur-yellow in tint, which are the clusters of the *actinomyces*. If one of the cheesy masses is submitted to pressure or teased out, these particles—which resemble lycopodium seeds—are slightly separated from the matter around them.

The majority of these are soft, something like tallow; others may be gritty to the touch, when they are impregnated with lime salts. Whether occurring in animals or man, these peculiar particles must always be considered diagnostic of the disease, even without the aid of the microscope.

When the nodules are removed from the connective-tissue stroma, this is found to be cavernous in its structure, from the large number of small cavities they occupied—another characteristic feature of the tumor.

I have already alluded to the histological characters of the nodules.

As to the manner in which, and channel by which, the fungus invades the tissues, there is no satisfactory evidence. It is, however, extremely probable that it enters, in the form of spores, through a wound, abrasion, fissure, or even by means of the delicate mucous follicles of the membrane lining the lips, mouth, pharynx and nostrils—in fact, any part of the digestive or respiratory canal. It has been shown that it may exist harmlessly in large numbers in the tonsilar glands of the pig, probably waiting for a casual abrasion or removal of the epithelium, in order that it may rapidly develop in the tissues beneath.

This injury may be inflicted in many ways, and very likely by the food upon which the animals most liable to the disease are fed. I am informed by a practitioner in Lincolnshire, that the malady is most frequent after cattle have been fed on straw, barley and chaff; and this may not only injure the mouth, but serve also as the vehicle for transmission of the fungus—straw being so often mouldy, and infested with vegetable parasites of various kinds.

The species of animal invaded by the *actinomyces* appears to have much influence on the pathological results. In man the tendency is to suppurative processes and metastatic abscesses; while in animals it is to new-formation tumors, and induration or degeneration of tissues—be they hard or soft; the extension of the fungus being progressive by means of its spores, which are disseminated, localize themselves, fructify and produce the characteristic changes in their surroundings. These spores may

find their way into the œsophagus, stomach and intestines, or into the bronchi and lungs, and there fructify.

That the disease is transmissible from one animal to another, there is now no reason to doubt, as the fact has been experimentally demonstrated by Johne and Ponfick. The experiments of these and others had previously failed, probably because the inoculation material was too old and had undergone change.

Johne subsequently employed quite fresh material, and was successful in three out of four experiments—the animals being two calves, a cow and a foal. The latter remained unaffected. The calves were inoculated subcutaneously behind the lower jaw and elsewhere, and a small quantity of the same material, which was derived from a tumor on a living cow, was also introduced into the peritoneal cavity. In one case death took place forty days after inoculation; the calf having lost its appetite, became emaciated and debilitated, and then succumbed. At the seat of inoculation, as well as in the abdomen, actinomykosis was markedly developed. In the second case, death took place 114 days after inoculation, and the results were found to be as marked as in the other instance.

The third case was a pregnant cow, which gave only a small quantity of milk. This animal was inoculated through the milk-duct of the teat. The inoculation was in a few days followed by inflammatory œdema, which soon became developed into phlegmonous mastitis. Without any treatment the inflammation subsided, but there remained a small hard swelling, which increased so much that in three months the quarter of the gland was double its normal size, and felt like a hard fibroma. No milk was secreted. The cow was killed 133 days after inoculation, and in the udder were discovered all the signs of actinomykosis; diffuse fibroma, with, in various parts, multiple spongy fibro-sarcomata, the interspaces of which contained the characteristic nodules or "granulation tissue," enclosing the fungus.

Ponfick did not succeed in inoculating dogs or rabbits. He endeavored to produce the disease in cattle, by feeding them with infective material in the form of fresh nodules, but the results were negative. By subcutaneous inoculation and intraven-

ous injection, however, he was completely successful, and the lesions of the former were similar to those in John's cases. Injection of the material into the jugular vein produced, in the course of two or three months, typical new formations in the lungs. The details of these experiments are very interesting, and I regret I cannot transcribe them here. But they conclusively prove that the artificial production of the disease does not alter in any way its characters.

There is no record of any instances which might tend to show that the disease may be accidentally transmitted; though the fact that it is inoculable leads us to suppose that it may be conveyed from one animal to another, from one man to another, or from animals to man, and *vice versa*.

Ponfick relates the case of a woman, thirty-four years of age, who was attacked by the disease, and who had been for several years employed as a servant, in which position she was frequently among sick cattle, and these were affected with what the veterinary surgeon who attended them called "wurm"—the popular name in Germany for the malady under consideration. This is the only case of probable transmission recorded.

Now, however; that attention is likely to be directed to the disease by veterinarians and surgeons, we may be able to note its accidental transmission from diseased to healthy animals, and to mankind.

*(To be continued.)*

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## TEXAS FEVER.

### NOTES OF AN OUTBREAK OF THAT DISEASE AMONG CATTLE.

By M. R. TRUMBOWER, V.S.

*(Continued from page 115.)*

October 10th.—I was called on by Mr. William Echternach to see some sick cattle, four miles northwest of Sterling.

History: His cattle had been grazing all summer upon a field through which flows the Elkhorn creek, after passing through the fields of Martin & Gleason, David Wolf, and others; since about

the 1st of August they had been herded a part of each day on the field adjoining, over which field the Cherokee cattle had been roaming at the time of the freshet, July 1st.

On arriving at his place I found five head of cattle penned up in the yard, and one was left lying in the lane, unable to rise.

No. 1.—A roan cow, four years old. Was first noticed to be sick, manifesting dullness and stupidity the day before, and had diminished in the yield of milk; this morning had only yielded one half the usual quantity. I found her with head and ears drooping, nose dry, horns warm, eyes dull and rather prominent, pulse 80, respiration 26, visible mucous membranes of a natural color, eats some and ruminates.

No. 3.—Red cow, six years old. Yielded this morning only one half the usual amount of milk; appears wild and excitable, pulse 66, nose moist, horns cold, eats and ruminates, fœces very dark colored and of a normal consistency.

No. 4.—Red heifer, one year old. Pulse 76, respiration 26, horns cold, nose dry, very tender along spine, trembling violently.

No. 5.—White steer, one year old, pulse 72, respiration 20, stiff in gait, fœces coated with mucus.

No. 6.—Red heifer, two years old. Unable to rise, tremor of flank muscles, membranes of a yellowish tinge, breath hot and offensive, fœces covered with small clots of blood, urine bloody, head extended, lower jaw resting on the ground, indifference to surrounding objects and noises, pulse 120, respiration 40.

Treatment prescribed:

R Acid carbolic  
Soda bi-carbonas, aa  $\bar{z}$  ij.  
Glycerine,  $\bar{z}$  uj. M

Sig. Half an ounce to be administered in a quart of water every six hours. No. 6 to take it every three hours.

Feed to be given: green corn-stalks, boiled oats, with a little salt to each feed. I had them placed in a pen under shelter, the yearlings separated from the cows. No. 6 was left lying where she dropped.

The remainder of Mr. Echtinach's cattle were placed upon another field, some distance removed from where they had been.

October 11th—No. 1.—Pulse 70, respiration 18, nose dry, membranes of a decided yellow tinge, eyes prominent, horns cold, legs cold, drooping of head and ears, remasticates, fœces very dark colored.

No. 2.—Lies down most of the time, hair erected and dead-looking; horns hot, nose dry, eats very little, shows evidence of suffering pain, very hollow in the flanks, fœces very dark-colored, pulse 100, respiration 24.

No. 3.—Still excitable, horns warm, nose moist, legs cold, pulse 56, respiration 16, fœces almost black, gives one-half the usual quantity of milk.

No. 4.—Pulse 68, respiration 20, horns very warm, legs cold, nose dry, eats little, don't ruminate, and refuses to drink; very tender along spine.

No. 5.—The only thing I can notice abnormal is a disinclination to move. Same treatment continued, dose to be given every four instead of every six hours.

No. 6.—Died at 11 A. M. Was found within four feet of where she laid yesterday at 4 P. M., lying on the right side. A small passage from the bowels is harder than normal, a little blood and mucus adhering to the anus, a few drops of blood hanging to the hair on inside thighs.

Removed the ribs and abdominal wall of left side; found a small quantity of blood serum in the chest and abdominal cavities; lungs presented less congestion and emphysema than any yet examined; pericardial fluid bloody colored, considerable ecchymosis over the left auricle of the heart, and also of the apex of the corresponding side. No heart-clots whatever; blood very scanty, thin, and of a bright scarlet color. Spleen, weight three pounds and a-half; found an extravasated blood-clot on the superior border under the peritoneal covering two inches in width and four inches in length, caused by a slight rupture of the capsule of the organ. Liver, weight thirteen pounds; upper portion of lobes lighter in color than normal, evidences of fatty degeneration, bile in the gall bladder, a greenish brown, and ropy. Kidneys normal. Abomasum—internal coat; studded over with granular appearing pointed elevations, the cardiac end softened and con-

gested; mucous membrane of small intestines reddened and somewhat softened; urinary bladder filled with urine—the color of port wine; specific gravity 1012, coagulated by application of heat. Mesenteric glands slightly enlarged; uterus healthy, containing a three month's old foetus, *which had several small radiated petechial spots about the head.*

October 12th—No. 1.—Pulse 52, nose moist, horns warm, eats, drinks, and remasticates: rumen very hard—almost impossible to indent it with the fist; fæces still too dark-colored.

No. 2.—Pulse 76, and soft; eats, drinks, ruminates; fæces still too dark in color.

No. 3.—Pulse 52; lost the excitable appearance, eats, drinks, ruminates; fæces of a lighter color.

No. 4.—Pulse 60; don't eat, nor drink, nor lie down; appears uneasy.

No. 5.—Apparently well. Discharged Nos. 3 and 5; treatment continued, adding wine and vegetable tonics.

October 15th—No. 1.—Judging from her general appearance, she does not seem to feel exactly well yet; fæces of a lighter color and softer than on the 12th.

No. 2. Filling out rapidly, and apparently about well; fæces of a normal appearance.

No. 4.—Pulse 86, respiration 26, nose moist, don't eat, drink, nor ruminate, persists in lying down, very tender along spine, constipated, resting nose on ground, head extended, manifests stupor and indifference to surroundings, apparently suffers no acute pain, coughed once to-day for the first time.

No. 7.—Red heifer, 2 years old, brought up yesterday: pulse 66, respiration 20, nose moist, horns warm, saliva flowing from the mouth, eats very little, weak and not inclined to move, manure very dark-colored and hard.

No. 8.—Steer, 1 year old, brought up yesterday, noticed to be sick on the 13th, passed bloody urine last night, died to-day at 2 P. M. Post-mortem appearance, thin in flesh.

Upon removing the right shoulder, the areolar tissue was found distended with gas, forming small bladders or bubbles. Muscular tissue pale and bloodless, lungs presenting nothing

abnormal in appearance, the trachea and larger bronchii contained some white froth; heart ecchymosed over external surface, internally destitute of blood-clots, and the small amount of blood contained was very thin and watery, slight petechia in left ventricle. Spleen, weight three and one-quarter pounds, internal structure broken down. Abomasum presented several small ulcers and abrasions, and a general redness of the lining, as did also the small intestines. Liver, weight thirteen pounds; gall bladder contained about three ounces of very dark-colored bile of a granular appearance. Urine bladder contained about twenty ounces of a dull, red-colored urine. Hard balls of faeces, coated with mucus and clotted blood, were found in the blind end of cœcum.

October 20th—No. 1.—Pulse 56, gaining in milk; No. 2, pulse 54; No. 4, pulse 68; No. 3, yielding a full amount of milk.

In the afternoon I made another visit, accompanied by Dr. W. B. E. Miller, who concurred with me in pronouncing them all convalescent.

October 24th—No. 2 had a miscarriage, otherwise doing well.

On the 3d day of October, Mr. Echtinach found a yearling heifer dead in his pasture, making a total loss of three, and six recoveries in the herd of forty animals exposed.

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## ABORTIONING CATTLE.

By JOHN FAUST, V.S.

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From encouragement extended to me and the earnest request contained in the quarterly journal of William R. Jenkins, for some one to renew the subject of abortion in cattle, I have been induced to send you this article.

I cannot advance any satisfactory theory as to the cause of this malady among cattle, and the German medical treatises in my possession do not aid me in my researches.

The medicine prescribed and used by myself for the past few years in the treatment of aborting cattle is *viburnum prunifolium*, and it has been attended with remarkable success.

Camphor with opium according to Hartmann, and ferrum sulphuric according to John (Saxon Yearly Report, 1872, page 134), have afforded satisfactory results.

I first tried the effect of *viburnum prunifolium* on three short horn bred cows that had aborted three times successively, each carried under treatment to full term.

Of a herd of thirty natives, of which nine had aborted in a very short time, all cows with calf treated with *viburnum prunifolium* carried to full term. One which received no medicine aborted.

Next, a herd of forty Ayrshire grade were treated with V. P. in reduced doses to experiment. One heifer so treated was saved, and six aborted. I then resumed my usual dose and no more aborted.

A large herd of Jerseys, of which one-half of the heifers usually aborted, treated with Vib. P. no recurrence of the same. In my judgment this resulted from an epidemic of abortion among the whole herd about seven years previous.

At present am treating a small but very choice herd of Jerseys. Several of the herd having aborted I was called to treat them. Prescribed *viburnum prunifolium* and no abortion has since occurred.

Many isolated cases might be mentioned which have afforded the same satisfactory results.

Dose—One-half drachm every day in cases of infection. Threatened abortion, same dose every hour or two as the case may require and confine in large box stall.

The following extracts relating to the use of *viburnum prunifolium* as a preventive of abortion, led me to try its effects upon cattle:

Dr. Phares, of Alabama, who has used the *viburnum prunifolium* very extensively, writes of his experience as follows in Hale's "New Remedies:—"

"It is nervine, antispasmodic, tonic, astringent, diuretic, and may be used to very good purpose in urinary affections, ophthalmia, aphthous sore mouth, chronic diarrhœa, dysentery, indolent ulcers, &c. It is an excellent remedy in colic, cramp, spasms,

palpitation and other affections incident to pregnancy, or arising from uterine disorders, and for after-pains. But it is particularly valuable in preventing abortion and miscarriage, whether habitual or otherwise, whether threatened from accidental causes or criminal drugging.

"It tones up the system, preventing or removing those harassing nervous symptoms, that so often torment, wear down, and disqualify the pregnant woman for the parturient effort. It enables the system to resist the deleterious influences of drugs, so often used for the purpose of procuring abortion. It is well known that the inner bark of the cotton-root is used by many to induce miscarriage, one pint of the strong decoction being sufficient for this purpose.

"The regular exhibition of the viburnum completely neutralizes the effect of the gossypium, compelling the delinquent mother, however unwilling, to carry the fetus to full term.

"Some farmers on whose plantations I have used this medicine and who have seen so much of its effects on negro women who always managed to miscarry, declare their belief that no woman can possibly abort if compelled to use the viburnum. This may be claiming too much for it. But it has certainly prevented abortion in every case in which I have ordered it for the purpose. Negatively, miscarriage has never taken place, so far as I am informed, in any case in which this medicine was used as a preventive.

"Brief notes of a few cases will give a better idea of my mode of employing this medicine.

"CASE I.—Mrs. —, widely known as an authoress, of very pale, delicate appearance, aged about twenty-seven, when some three months married aborted from injury received in leaping from the floor into bed. Once or twice subsequently she aborted at the same stage of pregnancy: once, I learned, twins. In disgust, she came under my care for severe intermittent fever, and on the 16th day of September, 1864, being again pregnant, she consulted with a view to prevent abortion. I ordered tincture viburni. She continued going on well for more than three months after the usual time for her misfortune, when, removing beyond

my reach, I lost sight of her. Several times she had to use the medicine very freely. I think it was on the 6th of October an artillery and cavalry fight took place near the house where she was boarding; her husband, wounded some time before this, was compelled to fly for safety; charges were made through the yard; a number of soldiers were killed about the place; the house was ransacked, an old gentleman living with the family murdered, yet she passed safely through this time of excitement and trial.

"CASE II.—In March, 1865, Mr. ——— consulted me in regard to his wife. She had never gone to full term, but had had several children at the eighth month, all of them dying one month after birth. Frequent pregnancies and hemorrhages had seriously impaired her health, for improving which I ordered suitable remedies. To prevent premature parturition, she being again pregnant, I directed tincture viburnum. At the eighth month, as usual, labor commenced vigorously, with copious sanguineous discharge. Both were soon arrested by a free exhibition of viburnum. She went on till full term and gave birth to a healthy boy, who still survives at a year old.

"CASE III.—Mrs. M——, mother of several children, has for several years suffered much from dysmenorrhœa, hemorrhages and abortions, and is pale, feeble and despondent. I ordered iron by hydrogen to improve the blood and nervous system, Fowler's arsenical solution to check leucorrhœa and prevent hemorrhage, and tincture viburnum to allay uterine congestion, pain, irritation and to tone up the reproductive organs. Some months afterward (March 2, 1865,) I was summoned in haste to see her. She was much improved every way, and supposed two or three months pregnant. Two bodies of troops had been ordered to form a junction and prepare for battle instantly at a point a mile distant, but visible from the upper story of the dwelling. Running hastily up stairs to see the array she was hurt; pains commenced, and, almost immediately, pretty free hemorrhage, which alarmed her excessively. A viburnum tree growing within a few paces of the house, I ordered infusions of the bark, which soon put a stop to both hemorrhage and contractions. On the 16th of August following, before day, she was alarmed by the escape of liquor amnii,

and I saw her early in the morning. As there was no pain, contractions or other indications of labor, I left her. This was a small leak, and she informed me that labor had been brought on in a previous pregnancy by a similar leak. About dark of the next day, forty hours after the flow commenced, I again saw her, and at 11 P. M. delivered her of a healthy eight months' child, which still survives.

"CASE IV.—January 25, 1866, Mrs. L., eighteen months married, had miscarried last year, in consequence of which she had suffered long and much, now pregnant and threatened with abortion. I ordered tincture viburnum thrice a day, oftener if necessary. She went on well till the 10th of April, when she was severely injured by a fall from her carriage. Strong uterine contractions ensued, but were arrested by the medicine, which had to be used freely for several days, gradually diminishing the quantity per diem. For nearly a week abortion was threatened, whenever the use of the viburnum was too long omitted. From this time she went on to full term without further accident, and was delivered of a large boy.

"CASE V.—January 25th, 1866, Mrs. H., married in 1862, has had no children, but an abortion or two, now pregnant, and threatened with abortion at the usual stage with her. I gave her tincture viburnum, with directions to use pro re nata. March 4th summoned again to see her. I find she has had considerable pains, contractions, and discharges for two days. She had taken the medicine as ordered, and was now up, easy, and the discharge a slight oozing merely. Ordered the medicine discontinued for the present. She had to use it again a month later, and from that time continued well, and at full term gave birth to a healthy child.

"CASE VI.—July 11th. 1866, Mrs. J., six or seven months pregnant, had had labor pains increasing in frequency and force for over thirty hours. I ordered tincture viburnum every hour, or as often as needed, until pains cease. Labor was soon arrested, and no further trouble has occurred.

"CASE VII.—Mrs. P., April 16th, 1866, has had severe colic, after noon, several days. Tincture viburnum was ordered and the dose was all required."

"VIBURNUM PRUNIFOLIUM IN THREATENED ABORTION AND IN MENORRHAGIA.—I send you a report of two cases in which tincture viburnum was used with success.

"CASE I.—On September 23d, 1878, I was summoned in haste to see Morilla, a colored woman, about thirty-two years old, who had received a wound from a fall. On reaching her home I learned that patient, while attempting to replace a rope in a well-whirl, had fallen from the well upon the sharp, ragged edge of a rail which was driven in the ground near by, with one end protruding, making a wound about five inches long, just above pubes, penetrating as far as the muscles of the abdomen. The woman being somewhat advanced in pregnancy, the shock brought on strong labor pains. After dressing the wound with ligature and adhesive strips, I made examination per vaginam, found the os considerably dilated, pains continuing regularly. I gave her tincture viburnum with directions to take the same quantity if the pains did not cease in one hour. Calling two or three hours after, I found the patient resting very quietly, with pains relieved. Woman recovered and will soon be confined.

"CASE II.—The next case was a case of menorrhagia (excessive menstruation), in which the various preparations of iron, ergot, etc., were used without relief. I finally put patient on a teaspoonful tincture viburnum, beginning with the medicine two days before her period. Flow was considerably diminished. Ordered her to repeat same at her next period, which she did with marked relief. Patient was a married woman, had been married two years, no children. After taking the viburnum a second time she became pregnant, and will soon have reached full term.

"The medicine acts, no doubt, as a uterine sedative, but I cannot explain the action. I would be very glad if I could see some thing in reference to it in your valuable journal."—(D. B. Nisbet, M.D., of Georgia, in *Southern Medical Record*.)

The following is from an article read before the Homœopathic Medical Society of the State of Pennsylvania, by John E. James, M.D., Philadelphia:

"Mrs. R., mother of one child and the subject of a previous miscarriage, was pregnant about three months when, after jumping from an unusually high car-step, she was attacked with sud-

den flooding and pain, which continued at intervals for nearly two days before I was called. I found the hæmorrhage very profuse, the pains regular, the os partially dilated. The testimony of the mother of the patient was, that of a certainty the fœtus had passed, but doubting it I prescribed the viburnum every quarter of an hour. Two or three doses wrought material change, when the time was gradually lengthened to two hours. The next morning pain and discharge were both stopped, and in a few days she was about as usual. Continued to full time, and was delivered of a healthy child.

"A peculiarity of the case, however, was that twice between this threatened miscarriage and the delivery, she was attacked with violent hæmorrhage without pain, giving rise to a fear of placenta prævia, but which was evidently caused by a partial detachment of the placenta. Cinnamon tincture cured both attacks.

Mrs. N., mother of one child and subject of one miscarriage, after a very long walk, was attacked in the night with a free discharge (a gush), followed by pain at intervals and continued flow. Upon reaching the patient in the morning, I prescribed rest (which she did not take), and viburnum every half hour. Improvement began immediately, and continued without any return of the trouble.

"Mrs. M., mother of three children and subject of several miscarriages, has mucous dysmenorrhœa, and quite frequent passages of moles at menstrual period. Was called last June and found the following symptoms: three months pregnant; chills slight; flashes of heat and oppressed breathing; headache; backache; nausea; vomiting; had great gush of blood followed by pains. Viburnum gave immediate relief, and there has been no return since.

"I have noticed that the cases which have responded the quickest to the viburnum are those with the great flow or gush of blood at or near the beginning of the trouble."

THREE CASES ILLUSTRATING THE USE OF VIBURNUM PRUNIFOLIUM IN MISCARRIAGES.—(By M. V. B. Morse, M.D., Marblehead, Mass. Read before the Massachusetts Homœopathic Medical Society, Oct. 9th, 1878).

"CASE I.—On the morning of Dec. 4th, 1876, I was called to see Mrs. G. at the third month of gestation. She had been taken the night previous with strong labor pains, which had resulted in producing quite a flow, that was gradually growing worse. I had recently read an account of the action of *viburnum prunifolium* in cases of threatened miscarriages in Hale's "New Remedies" (third edition), in which Dr. Phares, speaking of the action of *viburnum*, says: "It is a preventitive in habitual miscarriages. It prevents miscarriages from any cause, especially when attended by severe pain. It has never failed to prevent a threatened miscarriage, as far as I can learn." I therefore prescribed *viburnum* in water, teaspoonful doses, repeated each half hour, with directions to keep her quiet in bed. The following day she was nearly well, but I continued the *viburnum*, at lengthened intervals, for some time. She had no more pain or sickness of any kind up to the time of her confinement.

"CASE II.—Jan. 31st, 1877, was sent for to attend Mrs. C., who had just passed the fourth month in gestation. She had been overtaxing herself with hard work for a number of days, which brought on labor pains, followed by a profuse flow. I prescribed *viburnum*, in water, to be taken each half hour, and enjoined rest in bed, as in the first case. The *viburnum* was continued for two days, after which time she felt quite well up to the time of her confinement.

"CASE III.—On the 25th day of April, 1877, I was called to attend Mrs. W., thirty years of age, in her fifth pregnancy. She had always menstruated regularly up to that time (except during gestation), and ordinarily enjoyed the best of health. On the twelfth day of January she ceased to menstruate for the last time, and now had passed the third month of gestation. At this time her sister was taken very suddenly ill, and died on the 17th day of April. The shock caused by the death of her sister was such as to induce slight labor pains, which had increased without interruption for nearly a week, and were attended with a slight flow, which had continued four days when I was sent for on the 25th. I now enjoined rest and prescribed *viburnum*, to be taken in water every half hour.

"I called the following day and found that the pains and flow had ceased, and she was feeling much better. I now gave the viburnum every two hours, with directions to take rest for a number of days.

"She continued quite well, not meeting with any symptoms, other than those she had experienced in her former pregnancies, except that there was no perceptible change in her size or form, as she advanced in gestation.

"She made the necessary arrangements to be confined about the 12th of October, but on the 17th of September previous, after washing her kitchen floor, she was suddenly taken in labor, and in about four hours was delivered of a foetus, which as near as I should judge, could not have been more than three and one-half months advanced. From the condition and history of the case, I am convinced that the foetus was retained in utero from April 25th until Sept. 17th, without any perceptible change in its development.

"The mother was kept in bed ten days following confinement, during which time the lochia was about the same in quantity and quality as is generally met in such cases; but her complete recovery was protracted to nearly three months.

"I have since met with five or six other cases of the same class, which have yielded promptly to the action of viburnum."

Dr. Farnham related the case of a lady who had aborted six times, and had been subjected to a variety of treatment. The accident always occurred before the third month. Being put upon viburnum prunifolium she went on until the sixth month. Then, at a time corresponding to a menstrual epoch, death in her family caused her to be hurried out one stormy night and taken quite a distance in a carriage. Premature delivery took place, the child being born alive and living twelve hours. In the next pregnancy no other remedy was used, and no local treatment employed. She was told to rest four days at the periods corresponding to menstrual epochs, and to attend to ordinary hygiene. She went on to full term, and gave birth to a child weighing twelve pounds. Having had excellent results with viburnum prunifolium, he had used that to the exclusion of the viburnum opulus.

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EDITORIAL.

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## EMPIRICISM'S DEATH-BLOW.

The quiet observer who many years back have watched the progress of veterinary science in the United States, could use no better proverb than "Slow but sure," in noticing the advance which the science has slowly but steadily made in the last few years. Indeed, there has been scarcely a space of twelve months without some steps forward being made.

But a few years ago we had but one veterinary school; now a number of them are in running order. But a short time since there was only one veterinary journal; now there are three. Little gatherings of veterinarians, pompously calling themselves societies or associations, were now and then met with. In our day we have organized societies, with charters, constitutions and by-laws. And now there is another feature in recent progressive action: that is, the formation of State Veterinary Conventions.

Illinois, which first created the position of State Veterinarian, has again been the leader, in calling her practitioners together to a State Convention. She has done so, and so far as the news reach us, incomplete as they are, the affair has been a success. So much so, in fact, that we find the example is likely to be followed by other States. Wisconsin, Iowa, Michigan, Ohio, and perhaps more of the Western States are inviting their veterinarians to meet to organize and discuss the subject of the advance of veterinary science.

This great move cannot be ignored; and it is to be hoped that the West shall not remain alone in it. The Eastern States ought to act also at once; they ought also to call their veterinarians together; they ought to form their State Associations; and when once each State in the Union has her State Veterinary Medical Association, how easy it will be for all to unite under a grand body, the *American Veterinary Association*.

And what will be the true end and meaning of these gatherings, of these conventions, of those great State Associations, and of this grand National Veterinary Society? It will mean death to empiricism, to the ignorant practice of our profession.

Regular graduates may have, and again try by years of labor to elevate the profession from its low standing. Private veterinary schools may by degrees and with time have succeeded in throwing through the country enough educated men to chase the ignorant from the place they now occupy—but how many long years would it have taken? Illinois has done it at her convention—and we believe it can be done all over the country. And the essential factor, in fact the one without which it probably would not have taken place is—that is, if we are correctly informed—that the majority of these men were self made men; men who had made their way by hard work and honorable labor; men who, deprived of the opportunity of veterinary instruction, have themselves felt the duty they owed to the profession of their choice, and have paid it by organizing an association whose respectability cannot be ignored, and whose honor shall oblige to reject from its membership any undeserving applicants. They formed that association, organized it, and now are coming well prepared before their Legislature with an act to regulate the practice of veterinary medicine and surgery, which we sincerely hope will pass.

In the action of the Veterinary Society of Illinois, in that which will follow from other Western States, and which we shall probably see taking place all over the country, we feel that empiricism will receive its most terrible blow by the brotherly union of all practitioners of veterinary medicine all over the country.

By all means let us have nothing but State Veterinary Conventions until the great association is formed.

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#### BILLS REGULATING THE PRACTICE OF VETERINARY MEDICINE AND SURGERY.

We reprint in this issue the bill which was presented to the Legislature of Pennsylvania, and that which is to be sent to that of Illinois. The first was killed through the efforts of Keystone Veterinary Association. A careful reading of the two bills show how much more progress and truthful advancement there is in the Western than in the Pennsylvania document. It was a good thing the bill failed to pass.

## REPORTS OF CASES.

## CANINE SURGERY—PROLAPSUS RECTI.

By W. D. CRITCHERSON, D.V.S., HOUSE SURGEON.

Late in the afternoon of Wednesday, April 4th, there was brought to the hospital of the American Veterinary College a valuable fox terrier pup, owned by Mr. G——, of this city. On examination, the rectum was found everted and protruding about one and one-half inches beyond the anus.

The mucous membrane was very much swollen and highly congested. The little animal evinced much pain. He had been well, and nothing unusual was noticed about him until that morning, when he was found in his present condition.

The opinion was that it was due to constipation. The protruding intestine was washed with cold water, and after several moments' manipulation replaced in its normal position.

A pessary, made of soap rolled in powdered opium, was then introduced into the rectum, and chloral, grs. x., in pill form, was given.

A piece of elastic bandage, two inches wide, was then secured lengthwise of his body, with an opening through which his tail was allowed to protrude. A sponge was then placed under the bandage, over the anus, to assist in retaining the intestine. About ten o'clock that evening it was again everted, owing to the animal's efforts to defacate.

It was replaced, and next morning was found protruding; replaced again, as it was several times during the day. April 6th, replaced several times, and syrup of blackthorn, 3 j., given, as the animal was straining and trying to pass fecal matter. April 7th, as all efforts to retain the intestine had failed, it was decided to amputate it.

After the dog had been etherized, Dr. Coates performed the operation by the use of the ecraseur. Two inches were amputated, and the mucous and muscular coats were then secured to the anal opening by six stitches.

An injection was then given, and the animal remained quiet

till evening, when he began to manifest severe pain, and died about ten o'clock.

Post-mortem was held the next morning. Incision was made on the median line, and the symphysis cut through. When this was done, the amputated end of the rectum was found to be free to move in the pelvic cavity.

The stitches did not hold. Very little liquid fecal matter was found in the intestinal tract, but quite a large number of parasites (lumbricoids) were found in the small intestines. In one place they were coiled together, nearly filling the caliber of the gut. These were no doubt the exciting cause of the above condition. All the other organs were healthy.

#### PUERPERAL ECLAMPSIA.

BY THE SAME.

Sunday morning, April 29th, a call was left at the hospital to call to see a skye terrier bitch which had given birth to two pups the night before. As she was young and this was her first litter, the owner was quite anxious about her. Upon examination, it was found that she had prolapsus of the uterus, which was washed and replaced, and tr. opii., grs. viii., pot. bromide, grs. vi., was given in solution. Then left with directions to repeat the dose of pot. bromide every two hours till relieved of pain. Tuesday morning, May 1st, the owner brought her to the hospital for treatment. She had been having convulsions one after another, and they were afraid that she would bite some one. When received she lay quietly wrapped in a shawl, with her eyes closed and seemingly exhausted. There was a slight discharge of a whitish mucous, tinged with blood, from the vagina; it had very little odor.

There was general weakness with loss of power, well marked in the posterior extremities when she was induced to walk a few steps.

Before my examination of her was completed she lay down and rolled on her side, then raised herself on her anterior extremities. Her head was carried upward, backward and to one

side. The eyes were widely open and the pupils dilated. She was then taken with tetanic convulsions of all the voluntary muscles and fell on her right side, where she lay, opening and closing her mouth, while frothy saliva flowed from the commissures.

Her head, which was extended, would be raised from the floor only to fall as contraction and relaxation took place. The breathing was stertorous. Her fore legs were extended, while the hind ones were partially flexed at the hocks.

The duration of the spasms varied from a few seconds to several moments, recovering from one only to pass into another.

Pot. bromide, grs. x, was given. In about an hour the animal was free from spasms, but lay in a comatose condition, insensible to everything around her. Would not take nourishment.

Lay in this condition till afternoon, when she began to notice objects around and took a little alcoholic stimulants and milk. Later on she walked around the room, but was very weak behind.

During the early part of the evening the spasms returned and continued with intermissions till about eleven o'clock. During this time she received pot. bromide in grs. x doses.

Shortly after eleven o'clock I left her in a very weak and comatose condition.

The next morning at half-past six she was walking around the room, looking quite bright.

Gave her some stimulants and milk, and as she had not passed any fæces, I gave her an injection and unloaded the rectum of the hardened feces with which it was impacted. Urine had been passed during the night. I injected solution of carbolic acid into the vagina. Improved all the morning.

Temperature,  $101\frac{1}{2}^{\circ}$  Fah. Drinks milk; gave small doses of stimulants. Milk secretion almost entirely suspended. No pain; pupils contracted. Had no convulsions during the day, but is weak and acts as though only partially sensible to objects around her.

Thursday quite lively; drinks milk; loss of coordination not as well marked. Has slight chronic spasms. One dose of pot. bromide had the desired effect of controlling these spasms.

No fœces had yet been passed, so gave another injection. Only slight discharge from vagina. Injected weak solution of carbolic acid and sent her home, with directions to let the puppies suckle her and see if the milk secretion, which was then nearly suspended, could be stimulated.

The following Sunday morning I saw the little animal in the street apparently as well as ever. The owner said that she was giving full nourishment to her young, which were doing nicely.

### EXPERIMENTAL PHYSIOLOGY.

#### CONCERNING THE ACTION OF THE OXYGEN OF AIR IN THE PSEUDO-INSTANTANEOUS ATTENUATION OF VIRULENT CULTIVATIONS BY THE ACTION OF HEAT.

By M. A. CHAUVEAU.

In the method generally employed for the application of the process of rapid attenuation of virulent cultures, the presence of the atmospheric oxygen while the attenuation is taking place, is a necessary condition. It is a fact well established by the valuable researches of M. Pasteur, that oxygen is a very active attenuating agent of the virulency of infectious microbes. Would it not be that to the action of this agent, during the heating, is due the attenuation which is attributed to the action of heat? At least, would not oxygen contribute, more or less, to the production of the attenuating effect? These are questions deserving the most careful study. From experiments made, M. Chauveau concludes, not only that the presence of air does not act in the attenuation obtained by the charbon virus by heating it, but it takes better—much better—in the absence than in the presence of oxygen. With this gas, the virus presents a diminished resistance to the attenuating action of heat.

He adds: "One would be tempted to find a contradiction between these results and those so brilliantly presented by M. Pasteur, for the institution of his solid method of attenuation of viruses by the action of oxygen." This would be wrong. The conditions of the two orders of experiments being different, it would be sur-

prising if the results had been identical. What must be borne in mind from the results obtained by M. Chauveau, is that the method of attenuation of viruses by heat has its individuality and importance, which it will be necessary to take into consideration.—*Gazette Medicale.*

UPON THE DIMINUTION OF THE VIRULENCY OF THE BACTERIDIE OF ANTHRAX, UNDER THE INFLUENCE OF ANTISEPTIC SUBSTANCES.

BY CH. CHAMBERLAND & ROUX.

Phenic acid and bichromate of potassa were used in these experiments. According to the dose of the antiseptic agent, the bacteridies lose more or less of their virulent properties, cease to produce spores, and die.

The diminution in the virulency of the bacteridies as thus modified is, however, only temporary; it returns to them by culture. M. Pasteur has shown that in Toussaint's method, when bacteridies were attenuated by heating for ten minutes at  $55^{\circ}$ , the attenuation was only temporary, their culture continuing virulent. M. Chauveau, in recent experiments, has shown that bacteridies deprived of their germs and attenuated by a heat of  $45^{\circ}$ , during two or three hours, would regain their virulency by culture. Bacteridies attenuated by antiseptics, whether they give germs or not, preserve in repeated cultures a diminished virulency. It seems, then, that the varieties of bacteridies thus created are so much the more fixed in their new virulent properties, proportionately as the modifying effect has acted on them the more slowly.

Further experiments authorize the writers to say that other antiseptics exercise upon bacteridies an analogous action to that of phenic acid and bichromate of potassa. At any rate, the dose of antiseptic necessary to produce a determined effect varies with the composition of the bouillon of culture. Each variety of bacteridies has a special action upon the diverse species of animals. For instance, bacteridies reduced by the bichromate of potassa can kill sheep, or at least make them very sick (they are then vaccinated), while they remain harmless upon guinea-pigs and

rabbits which are not even vaccinated. Then, again, bacteridies attenuated by heat (culture at 42°, 43°), may kill guinea-pigs and rabbits, and still remain without effect upon sheep, and do not vaccinate them. This shows how prudent one must be in the choice of vaccine matters which may be used in practice.—*Gazette Medicale.*

## SOCIETY MEETINGS.

### NEW YORK STATE VETERINARY SOCIETY.

The fourteenth regular meeting of the New York State Veterinary Society was held at the American Veterinary College, on Tuesday evening, June 12, 1883, at eight o'clock, with the President, Dr. Liantard, in the chair. The minutes of the last meeting were read and approved.

The President then called the attention of the members to the subject for discussion—"scarlet fever in horses." He said that articles having been published in some of the medical and daily papers, speaking of scarlet fever occurring in horses, and being considered by some as a possible origin of outbreaks in the human family, the subject was deserving of attention on the part of veterinarians. On being asked to express his opinion on the matter, Dr. Liantard said that the disease which had been most recently described by Prof. Williams, had also been mentioned by others, amongst whom were Percivall and Haycock; that he personally, as far as he knew of scarlet fever in man, had never met with an affection of horses which could be compared to it; that he had seen cases of so-called scarlatina as described in the text books, but considered them as mild forms of purpura with laryngeal complications, and that he had never observed the many essential symptoms of scarlet fever, nor that of desquamation; that he was now engaged in various experiments in relation to the matter, and would be pleased to let them known to the association afterwards.

Dr. L. McLean thinks Prof. Williams made a mistake in calling the disease, as he describes it, scarlet fever.

Dr. Michener has never seen a case of scarlet fever in the horse, but has seen a mild form of purpura hemorrhagica, with symptoms similar to those described by Williams as the symptoms of scarlet fever.

Dr. Coates has seen cases of scarlet fever in the human family, but has never seen the same symptoms in the equine species; says that Williams has taken the statements of other men, and copied the symptoms of scarlet fever from some work on human medicine.

Dr. Dixon thinks Williams is right in calling the disease, as he describes it, scarlet fever. Has seen cases similar to it, and treated them as such, although the temperature has been higher than the temperature given by Williams; the petechial spots he saw, also the swelling of the limbs.

Dr. Coates wanted to know what kind of spots Dr. Dixon had seen.

Dr. Dixon replied, that the spots he saw were similar to the spots described by Williams; they could be seen on the mucous membranes of the nasal cavities and on the membranes of the eye; would be there one day and disappear the next. Has seen cases become worse gradually, and the swellings of the limbs were not the swellings of purpura.

Dr. Robertson has never seen a case of scarlatina in the horse the same as the scarlatina in the human family, and does not think there is any contagious disease in the equine similar to scarlet fever of man.

Dr. Crane has never seen a case of scarlet fever in the horse as described by Williams.

Dr. Dixon, in answer to Dr. Liantard's question, as to how many horses there were in the stable where he was treating his patient; replied there were forty horses or more.

Dr. Liantard then said, as scarlet fever is contagious, how was it there were not more cases in the same stable. Dr. Liantard said that he did not know of any author, whether French, German or Italian, who agree that there was such affusion as scarlet fever in horse.

On favorable report from the Board of Censors, Dr. H. W. Bath was elected to membership.

Dr. Michener proposed the name of Dr. C. Bretherton for membership, which was referred to Board of Censors.

Dr. Dixon was appointed essayist for the next meeting. Motion to adjourn was carried.

W. S. DEVOE, *Secretary*.

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#### KEYSTONE VETERINARY MEDICAL ASSOCIATION.

The regular monthly meeting of the Keystone Veterinary Medical Association was held on the evening of May 5th.

The bill regulating the practice of veterinary medicine and surgery, now before the State Legislature, was taken up and discussed, and the society, deeming it unworthy the commendation of the true profession, decided to oppose the passage of the same, and each member was instructed as to his duty in this matter.

The essayist of the meeting, Dr. Goentner, then read a paper on azoturea or uræmic poisoning. After defining the disease, the essayist referred to several analyses of the urine he had made, in which he found traces of sugar. On learning of the tests made, Dr. Zuill contended that it might be the result of the tests used, and not from its presence in the urine. The essayist dwelt more especially upon the forms of treatment, which varied very much in each case, and showed very remarkably favorable results in his cases. Dr. Zuill strongly advocated bleeding in these cases, while Drs. Glass and Hoskins opposed it in great measure, on the grounds that this would but slightly lessen the amount of uræmic matter present in the blood. The use of sudorifics was highly extolled by the use of blankets, &c.

After hearing the reports of several cases the society adjourned.

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The regular monthly meeting for June was held on the evening of June 2d, at 8:30.

Among the reports from the committees was one in regard to the defeat of the bill presented before the State Legislature for the regulation of the practice of veterinary medicine and surgery. It contained so many vicious features that the Society at a previous

meeting determined to oppose it, and were rewarded by a severe defeat of the bill.

Several important communications were received, of deep interest to the profession, which will be reported to the *REVIEW* at an early date.

Dr. Wm. L. Zuill then read an essay upon "Tetanus in the West Indies." Owing to the lateness of the hour at its conclusion, no discussion followed, and the meeting adjourned.

W. HORACE HOSKINS, *Secretary*.

The writer would again call the attention of the alumni of the American Veterinary College to a desire upon the part of that Association to compile a directory, &c., of its members, who will please forward their names and any interesting data to 254 S. 15th street, Philadelphia, Pa.

W. HORACE HOSKINS, *Secretary*.

## CORRESPONDENCE.

### STRICTURE OF THE DUODENUM AND ULCER OF THE STOMACH.

#### *Editor Review :*

At midnight of the 17th inst. I was called to see a grey road-mare, 11 years old, said to be suffering with colic. The history of the case was a short and simple one: The mare had been in the best of health up to midnight, when she lay down as usual for the night's rest. In a few seconds' time she arose, appeared quite uneasy, and broke out with a profuse cold sweat. Twenty minutes later I saw her, with the following symptoms presenting themselves: The patient was quiet, the body cold, wet and clammy, with a perspiration which had been so profuse that it ran down the legs in streams. The breathing was regular, not accelerated, but almost entirely abdominal. The temperature stood at 99° F., and the mucous membrane was normal. The pulse could not be felt at the jaw, but the heart-beat was at 40 and sounded weak. At intervals of several minutes the patient would become uneasy, turn round and round in the box, always to the right, and occasionally would carefully lie down, roll on

the back and lie for a minute or two, then arise. A rectal examination revealed nothing. Percussion resulted in the finding of a dull spot about the size of a man's head in the lower posterior part of the chest. Auscultation showed the respiration to be very superficial. Considering the displacement of lung tissue, the suddenness of attack, and the nervous shock, a probable diagnosis of rupture of the diaphragm, with hernia of the small intestine, was made. This belief was increased when, after a few hours' time, the dull spot disappeared from the right side of the chest, grew larger on the left side, and gradually became tympanitic. That obstruction to the passage of food from the stomach existed, seemed conclusively proven by the frequent eructation of gases and vomiting of the contents of the stomach. Considering the case hopeless, grain doses each of atropine and morphine were given every four or six hours, with an occasional dose of ammonia and chloride of lime to relieve the stomach of gas. After a sickness of 35 hours, the patient died suddenly from a failure of the heart, and a post-mortem examination was made. The stomach was distended to its very greatest capacity with gas, partly digested food and fluids. On the floor of the left cul-de-sac, near the great curvature and near the line separating the dense from the soft mucous membrane, three ulcers were found. Judging from the appearance of the largest one, they had existed for a long time, and yet the patient had never been sick, was in the best condition possible, and was always a free, prompt driver. I forward you, by express, the specimen.

On examining the small intestine, it was found to be greatly distended in the form of a sac, from near the pylorus backward, to the distance of twelve inches, where it terminated by a stricture which partly closed the canal. Yet it was sufficiently large to permit of the passage of the little finger. But little alimentary matter had recently passed the stricture. The mucous membrane lining the sac, and the stricture, was deeply discolored by blood. I should like to ask what caused the apparent great nervous shock? Did the patient suffer from angina?

A. A. HOLCOMBE, I.V.S.U.S.A.

FORT LEAVENWORTH, Kas., April 20, 1883.

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## CÆSAREAN OPERATION ON A BITCH.

WORCESTER, May 22, 1883.

*Editor of Veterinary Review:*

DEAR SIR—I was called on the morning of May 9th to attend a small skye terrier bitch which I was informed had the day before given birth to one dead pup and had since been in severe labor without making any progress.

On examination could just feel the head of a pup, and after about half an hour came to the conclusion that delivery could not be had per vagina, and suggested the Cæsarean operation, which the owner consented to.

Placing her under ether, I made a section on the median line through the abdominal walls exposing the uterus. I incised it about two inches and removed two fœtuses. I closed the uterine opening with carbolized catgut sutures and the abdominal opening with the same. After the operation the bitch was placed on a clean straw bed and covered with a rug, and was not disturbed until the next day, when some milk was offered, of which she drank but little.

She remained very quiet for four days, during which time she was given about a gill of milk punch three times a day. The fifth morning, she appearing brighter, some milk was offered, which she drank eagerly, after which time she improved rapidly, so that at the present writing—May 22d—she is capering about my feet bright and smart as if there was no such operation as gastro-hysterotomy.

JOHN B. COSGROVE, D.V.S.

## VETERINARY LEGISLATION.

AN ACT to regulate the practice of veterinary medicine and surgery in the cities of the first and second class.

SECTION 1. Be it enacted by the Senate and House of Representatives of the Commonwealth of Pennsylvania in General Assembly met, and it is hereby enacted by the authority of the same: That the standard qualifications of a practitioner of vete-

inary medicine and surgery or any one who may attempt to practice singly or jointly veterinary medicine or surgery in cities of the first and second class shall be and consist of the following, namely: A comprehensive and practical knowledge of comparative anatomy, physiology, chemistry, materia medica, the practice of veterinary medicine and surgery, hygiene, and a good moral character.

SECTION 2. The possession of a diploma, regularly issued by a veterinary school acting under a charter from this or other State or country, shall constitute the sufficient and necessary license for the person to whom such diploma is granted to practice singly or jointly veterinary medicine and surgery, as set forth and empowered in said diploma. *Provided, however, that a diploma that has been, or that may hereafter be granted for a money consideration or other article of value alone, or that has been, or may hereafter be granted to any one who has not pursued the usual course of studies required by a legally chartered veterinary school, shall not be considered as sufficient qualification under this act. And provided that veterinary schools or colleges organized as aforesaid, shall upon application, without examination, issue a diploma to any person who has studied, or may study for five consecutive years in the office of a practicing veterinary surgeon the branches set forth in the first section of this act, or who has for five years before the passage of this act been continuously engaged in the practice of veterinary surgery and medicine.*

SECTION 3. Any practitioner who may not have a diploma, as provided for in section two of this act, and who may not be qualified as hereinafter provided, shall have the privilege of applying to the president and officers of the Pennsylvania College of Veterinary Surgeons, or any other legally chartered veterinary school, for an examination in the various branches of medical science and art as set forth in section one of this act. Whereupon, it shall be the duty of the president, or in his absence, the vice-president of said college, to notify the applicant of the time and place of the next meeting of the college, and also to furnish him with a copy of the constitution and by-laws of said college, and

when said applicant personally appears at a regular meeting of the college, to instruct the faculty and Board of Censors to examine him according to section four, article three, and section five, article eleven of their constitution, which reads as follows:

"SECTION 4—Article 3. Persons applying for senior membership shall be examined by the faculty in their respective branches, after which a ballot shall be taken by the same, and if the majority vote in the affirmative they shall be referred to the Board of Censors.

"SECTION 5—Article 11. A two-thirds vote of the Board of Censors, composed of not less than six veterinary surgeons whose names shall be affixed with the diploma, will be necessary to entitle the candidate to a degree of doctor of veterinary medicine and surgery." And it shall be the duty of the president and officers of said college, when the applicant is found to be qualified, as set forth in section one of this act, to grant such applicant, on receipt of thirty dollars, (which sum shall be used exclusively for the benefit of the college), a certificate of membership signed by the proper officers. And said certificate shall be the sufficient license for the person to whom it is granted, to open an office in any city of the first class for the practice of veterinary medicine and surgery.

SECTION 4. Any of the faculty or Board of Censors who shall be found guilty of receiving, directly or indirectly, any other compensation for instituting such examination than that which is herein provided, shall be punished by a fine or imprisonment, or both, at the discretion of the court, the fine not to exceed five hundred dollars, and imprisonment not to exceed one year.

SECTION 5. Any person violating the provisions of this act shall be deemed guilty of a misdemeanor, and on conviction thereof shall be sentenced to pay a fine not exceeding fifty dollars for the use of the county wherein such misdemeanor is committed. Any person so convicted shall not be entitled to any fee for services rendered, and if a fee shall have been paid, the same may be recovered as debts of like amount are now recoverable by law.

**AN ACT to regulate the practice of Veterinary Medicine and Surgery in the State of Illinois.**

**SECTION 1.** Be it enacted by the people of the State of Illinois, represented in the General Assembly: That no person shall be permitted to practice as a veterinary surgeon, by either prescribing for, or treating any domestic animal for any disease, injury or ailment whatever, without having previously obtained a diploma from some college, authorized to graduate students in veterinary medicine and surgery, or is a recognized member of the Illinois State Veterinary Medical Association, or who has passed a satisfactory examination before an appointed board for that purpose.

**SECTION 2.** Every person holding a diploma from any veterinary college, or certificate of membership of said Veterinary Medical Association, or from the Board of Examiners appointed, shall, previous to his engaging in the practice of veterinary medicine and surgery, have said diploma or certificate recorded in the office of the clerk of the county in which he resides; and the record shall be endorsed thereon. Any person removing to another county to practice, shall procure an endorsement to that effect upon his diploma or certificate from the county clerk and shall record the diploma or certificate in like manner in the county to which he removes. The holder shall pay to the county clerk the usual fees for making the record.

**SECTION 3.** Any person shall be regarded as practicing veterinary medicine and surgery within the meaning of this act, who shall profess publicly to be a veterinary surgeon, and who prescribes for or treats sick and injured domestic animals. But nothing in this act shall be construed to prohibit gratuitous services in case of emergencies.

**SECTION 4.** Any person practicing veterinary medicine or surgery in this State, without complying with the provisions of this act, shall be punished by a fine of not less than fifty dollars nor more than two hundred dollars, or by imprisonment for a period of not less than thirty days nor more than two years, or by both fine and imprisonment for each and every offense. Any

person filing or attempting to file as his own, the diploma or certificate of another, or a forged or fictitious diploma or certificate, upon conviction shall be subject to such fine and imprisonment as are made and provided by the statutes of this State for the crime of forgery.

## NEWS AND SUNDRIES.

**LARGE MULE.**—A mule in Kansas City is eighteen hands and three inches high. It weighs 1975 pounds.

**PREVENTION OF MAMMARY ABSCESS.**—Equal parts of chloroform and glycerine, well shaken and quickly applied and covered with oil silk, is highly recommended.—*Druggists' Circular.*

**POLYORCHISM.**—A case of polyorchism was observed in Bulgaria, in a farmer eighteen years of age. There were three testicles, two being on the right in the scrotum, one above the other.—*Med. Record.*

**EXTERMINATION OF HOG-CHOLERA.**—It is said by officers of the Department of Agriculture that hog cholera has been practically exterminated. Unsuccessful attempts have been made for weeks past to secure virus from infected hogs for experimental purposes.—*Am. Cultivator.*

**FERTILITY AT ADVANCED AGE.**—A Darlington correspondent informs the *London Live Stock Journal* of a remarkable affair which has taken place in that town. Mr. Trees, Parkgate, Darlington, has in his possession a pony aged thirty-four years, which gave birth to her first foal on the 28th April last.

**SUPERFETATION.**—Mr. B. B. Olds, of Clinton, Wis., writes us that a two-year-old Poland-China sow, on his farm, on the 16th of April last, was delivered of nine good pigs, and that twenty days thereafter she was delivered of fourteen more. Certainly a very remarkable occurrence.—*Breeders' Gazette.*

**REPORTED PLEURO-PNEUMONIA.**—Pleuro-pneumonia was assigned as the cause of the death of some cows at Washington

lately, but the veterinarian of the Agricultural Department, Dr. Salmon, avers, after an autopsy, that there was no internal evidence of contagious pleuro-pneumonia.—*Farmers' Review*.

**RATION OF HAY FOR A HORSE.**—The experiments of Wolff and others, at German experiment stations, shows that a horse weighing 1,100 to 1,200 pounds would eat from twenty-two to twenty-seven and a half pounds of hay, if no other food was given. With grain, twenty to twenty-five pounds was usually eaten by working horses of that weight. Lighter horses would not need quite so much, but we can find no data of experiments with horses weighing less than 1,000 pounds.—*Country Gentleman*.

**BILL TO PREVENT SPREAD OF GLANDERS.**—Another good thing the Illinois Legislature has done, is the passing of Senator Gillham's bill to prevent the spread of glanders, and appropriating \$10,000 to pay the cost of stamping out the disease where it now exists. The same Senator, the sterling friend of farmers, and a farmer himself, has pushed through a dog law which promises a new lease of life to the sheep industry in this State.—*Prairie Farmer*.

**SALICYLATE OF ZINC.**—This salt is very soluble in water, and dissolves also in alcohol and ether. The medical properties attributed to salicylate of zinc are that it forms a valuable antiseptic and astringent agent. In certain kinds of cancerous ulcers it has, we are told, given some excellent results, and has been used successfully in gonorrhœa, as an injection, in solution containing one-half to one per cent. of the salt. Messrs. Poignet and Demarres, two French pharmacists, assert that it is preferable to sulphate of zinc as an astringent in ophthalmic affections, and in other cases, since it combines with its astringent action the antiseptic properties of salicylic acid.—*The Monthly Magazine of Pharmacy*.

**A SINGULAR DEFORMITY.**—The St. Paul *Daily Globe* says: May 27 there was dropped at the stock farm of Geo. W. Sherwood, located at Sheldon, Ia., by a mare sired by Hughy Angus, son of Swigert, a bay colt to Raymond, son of Alden Goldsmith, with five legs. The deformity commences from the inside of

the knee of the left fore-leg, the double formation being connected until just above the ankle, where the two become distinct, the only difference between the two being that the inner is a trifle smaller and shorter than the regular limb, so that the foot does not touch the ground when he moves around. The colt is otherwise perfectly formed, large, vigorous and active, and walks and runs without apparently suffering any inconveniences from the extra limb.—*Turf, Field and Farm*.

PROGRESSIVE ILLINOIS.—At last Illinois has a State Veterinary Association, and we believe it will result in great benefit to the live stock interests of the State. The organization was perfected at a meeting of veterinary surgeons in Chicago last week by the election of the following officers for the ensuing year: President, Dr. A. H. Baker, Chicago; Vice-Presidents, Drs. William Sheppard, Ottawa; I. J. Miles, Charleston; J. D. Tuthill, Chicago; Recording Secretary, Dr. J. Hughes, Chicago; Corresponding Secretary, Dr. J. F. Ryan, Chicago; Treasurer, Dr. W. L. Williams, Bloomington; Board of Censors, Drs. N. H. Paaren, Chicago; W. Sheppard, Ottawa; R. J. Withers, Chicago. The Association will ask the Legislature to pass, before adjournment, a bill providing that no person shall be permitted to practice veterinary medicine or surgery in Illinois without a diploma from some college duly authorized to graduate students, unless he is a recognized member of the State Veterinary Medical Association, or has passed a satisfactory examination before a board appointed for the purpose.—*Prairie Farmer*.

THE REVIVAL OF THE PORK PROBLEM IN THE *North German Gazette*, by attempts to show from statistics that American pork is sixty times more liable to produce trichinosis than German, may, says *The Sun*, give Minister Sargent something more to do. A short time since it was charged in the German newspapers that thirteen deaths had occurred in the garrison at Tilsit from eating American pork, and that many more of the troops were sick. Mr. Sargent caused the nearest consular officer to make an inquiry, and it was found that fourteen trivial cases of trichinosis had occurred, and that every one of the patients had

recovered. The statement that American pork is sixty times more trichinosed than German is about twenty times too strong. It is in fact unwarranted by any trustworthy statistics.—*Medical Record*.

**MORE VETERINARIANS NEEDED.**—In an address before the Kentucky Medical Society, at its recent session, the practice of veterinary surgery was commended to young men. The speaker estimated that the yearly loss arising from the want of sound advice and treatment—the horses of the country being valued at nearly eight hundred million dollars—amounts to \$15,000,000.—*Medical Record*.

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### EXCHANGES, ETC., RECEIVED.

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**FOREIGN.**—Veterinary Journal, Veterinarian, Clinica Veterinaria, Presse Veterinaire, Revue Scientifique, Gazette Medicale, Revue Dosimetrique, Annales de Bruxelles, Revue d'Hygiene, Journal de Zootechnie, Archives Veterinaires, Revue fur Thierheilkunde und Thierzucht.

**HOME.**—Medical Record, Druggists' Circular, Rural New Yorker, American Agriculturist, Country Gentleman, Breeders' Gazette, Live Stock Journal, Spirit of the Times, Turf, Field and Farm.

**JOURNALS.**—Journal of Agriculture, Ohio Farmer, Home Farm, Medical Register, College and Clinical Record, Medical Herald, Cheyenne Gazette, The Planet.

**COMMUNICATIONS.**—W. R. Howe, A. A. Holcombe, W. Devoe, A. Zundel, F. E. Rice, W. L. James.

**PAMPHLET.**—Montreal Veterinary College Announcement.